



## Complete Summary

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### GUIDELINE TITLE

ACR Appropriateness Criteria® nontraumatic knee pain.

### BIBLIOGRAPHIC SOURCE(S)

Bennett DL, Daffner RH, Weissman BN, Blebea JS, Jacobson JA, Morrison WB, Resnik CS, Roberts CC, Rubin DA, Schweitzer ME, Seeger LL, Taljanovic M, Wise JN, Payne WK, Expert Panel on Musculoskeletal Imaging. ACR Appropriateness Criteria® nontraumatic knee pain. [online publication]. Reston (VA): American College of Radiology (ACR); 2008. 7 p. [44 references]

### GUIDELINE STATUS

This is the current release of the guideline.

This guideline updates a previous version: Pavlov H, Dalinka MK, Alazraki NP, Daffner RH, DeSmet AA, El-Khoury GY, KNeeland JB, Manaster BJ, Rubin DA, Steinbach LS, Weissman BN, Haralson RH III, Expert Panel on Musculoskeletal Imaging. Nontraumatic knee pain. [online publication]. Reston (VA): American College of Radiology (ACR); 2005. 9 p. [44 references]

The appropriateness criteria are reviewed annually and updated by the panels as needed, depending on introduction of new and highly significant scientific evidence.

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## SCOPE

### DISEASE/CONDITION(S)

Nontraumatic knee pain

## **GUIDELINE CATEGORY**

Diagnosis  
Evaluation

## **CLINICAL SPECIALTY**

Family Practice  
Internal Medicine  
Nuclear Medicine  
Orthopedic Surgery  
Pediatrics  
Radiology

## **INTENDED USERS**

Health Plans  
Hospitals  
Managed Care Organizations  
Physicians  
Utilization Management

## **GUIDELINE OBJECTIVE(S)**

To evaluate the appropriateness of initial radiologic examinations for patients with nontraumatic knee pain

## **TARGET POPULATION**

Patients with nontraumatic knee pain

## **INTERVENTIONS AND PRACTICES CONSIDERED**

1. X-ray, knee and ipsilateral hip
2. Magnetic resonance imaging (MRI), knee, without contrast
3. MR arthrography, knee
4. Nuclear medicine(NUC), - technetium (Tc)-99m bone scan, lower extremity
5. Ultrasound (US), knee
6. Computed tomography (CT), knee, without contrast
7. CT arthrography, knee

## **MAJOR OUTCOMES CONSIDERED**

Utility of radiologic examinations in differential diagnosis

## **METHODOLOGY**

### **METHODS USED TO COLLECT/SELECT EVIDENCE**

Searches of Electronic Databases

## **DESCRIPTION OF METHODS USED TO COLLECT/SELECT THE EVIDENCE**

The guideline developer performed literature searches of peer-reviewed medical journals, and the major applicable articles were identified and collected.

## **NUMBER OF SOURCE DOCUMENTS**

Not stated

## **METHODS USED TO ASSESS THE QUALITY AND STRENGTH OF THE EVIDENCE**

Weighting According to a Rating Scheme (Scheme Not Given)

## **RATING SCHEME FOR THE STRENGTH OF THE EVIDENCE**

Not stated

## **METHODS USED TO ANALYZE THE EVIDENCE**

Systematic Review with Evidence Tables

## **DESCRIPTION OF THE METHODS USED TO ANALYZE THE EVIDENCE**

One or two topic leaders within a panel assume the responsibility of developing an evidence table for each clinical condition, based on analysis of the current literature. These tables serve as a basis for developing a narrative specific to each clinical condition.

## **METHODS USED TO FORMULATE THE RECOMMENDATIONS**

Expert Consensus (Delphi)

## **DESCRIPTION OF METHODS USED TO FORMULATE THE RECOMMENDATIONS**

Since data available from existing scientific studies are usually insufficient for meta-analysis, broad-based consensus techniques are needed for reaching agreement in the formulation of the appropriateness criteria. The American College of Radiology (ACR) Appropriateness Criteria panels use a modified Delphi technique to arrive at consensus. Serial surveys are conducted by distributing questionnaires to consolidate expert opinions within each panel. These questionnaires are distributed to the participants along with the evidence table and narrative as developed by the topic leader(s). Questionnaires are completed by the participants in their own professional setting without influence of the other members. Voting is conducted using a scoring system from 1 to 9, indicating the least to the most appropriate imaging examination or therapeutic procedure. The survey results are collected, tabulated in anonymous fashion, and redistributed after each round. A maximum of three rounds is conducted and opinions are unified to the highest degree possible. Eighty percent agreement is considered a

consensus. This modified Delphi technique enables individual, unbiased expression, is economical, easy to understand, and relatively simple to conduct.

If consensus cannot be reached by this Delphi technique, the panel is convened and group consensus techniques are utilized. The strengths and weaknesses of each test or procedure are discussed and consensus reached whenever possible. If "No consensus" appears in the rating column, reasons for this decision are added to the comment sections.

## **RATING SCHEME FOR THE STRENGTH OF THE RECOMMENDATIONS**

Not applicable

## **COST ANALYSIS**

A formal cost analysis was not performed and published cost analyses were not reviewed.

## **METHOD OF GUIDELINE VALIDATION**

Internal Peer Review

## **DESCRIPTION OF METHOD OF GUIDELINE VALIDATION**

Criteria developed by the Expert Panels are reviewed by the American College of Radiology (ACR) Committee on Appropriateness Criteria.

## **RECOMMENDATIONS**

### **MAJOR RECOMMENDATIONS**

#### **ACR Appropriateness Criteria®**

#### **Clinical Condition: Nontraumatic Knee Pain**

#### **Variant 1: Child or adolescent: nonpatellofemoral symptoms. Mandatory minimal initial exam.**

<b>Radiologic Procedure</b>	<b>Rating</b>	<b>Comments</b>	<b>RRL*</b>
X-ray knee	9		Min
X-ray hip ipsilateral	1		Med
CT knee without contrast	1		Low
CT arthrography knee	1		Low

<b>Radiologic Procedure</b>	<b>Rating</b>	<b>Comments</b>	<b>RRL*</b>
MRI knee without contrast	1		None
MR arthrography knee	1		None
US knee	1		None
NUC Tc-99m bone scan lower extremity	1		Med
<b><u>Rating Scale:</u> 1=Least appropriate, 9=Most appropriate</b>			<b>*Relative Radiation Level</b>

Note: Abbreviations used in the tables are listed at the end of the "Major Recommendations" field.

**Variant 2: Child or adult: patellofemoral (anterior) symptoms. Mandatory minimal initial exam.**

<b>Radiologic Procedure</b>	<b>Rating</b>	<b>Comments</b>	<b>RRL*</b>
X-ray knee	9		Min
X-ray hip ipsilateral	1		Med
CT knee without contrast	1		Min
CT arthrography knee	1		Min
MRI knee without contrast	1		None
MR arthrography knee	1		None
US knee	1		None
NUC Tc-99m bone scan lower extremity	1		Med
<b><u>Rating Scale:</u> 1=Least appropriate, 9=Most appropriate</b>			<b>*Relative Radiation Level</b>

Note: Abbreviations used in the tables are listed at the end of the "Major Recommendations" field.

**Variant 3: Adult: nontrauma, nontumor, nonlocalized pain. Mandatory minimal initial exam.**

<b>Radiologic Procedure</b>	<b>Rating</b>	<b>Comments</b>	<b>RRL*</b>
X-ray knee	9		Min
X-ray hip ipsilateral	1		Med
CT knee without contrast	1		Min
CT arthrography knee	1		Min
MRI knee without contrast	1		None
MR arthrography knee	1		None
US knee	1		None
NUC Tc-99m bone scan lower extremity	1		Med
<b><u>Rating Scale:</u> 1=Least appropriate, 9=Most appropriate</b>			<b>*Relative Radiation Level</b>

Note: Abbreviations used in the tables are listed at the end of the "Major Recommendations" field.

**Variant 4: Child or adolescent: nonpatellofemoral symptoms. Initial knee radiographs nondiagnostic (demonstrate normal findings or a joint effusion).**

<b>Radiologic Procedure</b>	<b>Rating</b>	<b>Comments</b>	<b>RRL*</b>
MRI knee without contrast	9		None
X-ray hip ipsilateral	2	Indicated if there is clinical evidence or concern for hip pathology causing referred pain to the knee.	Med
CT knee without	1		Low

<b>Radiologic Procedure</b>	<b>Rating</b>	<b>Comments</b>	<b>RRL*</b>
contrast			
CT arthrography knee	1		Low
MR arthrography knee	1		None
US knee	1		None
NUC Tc-99m bone scan lower extremity	1		Med
<b><u>Rating Scale:</u> 1=Least appropriate, 9=Most appropriate</b>			<b>*Relative Radiation Level</b>

Note: Abbreviations used in the tables are listed at the end of the "Major Recommendations" field.

**Variant 5: Child or adult: patellofemoral (anterior) symptoms. Initial knee radiographs nondiagnostic (demonstrate normal findings or a joint effusion).**

<b>Radiologic Procedure</b>	<b>Rating</b>	<b>Comments</b>	<b>RRL*</b>
MRI knee without contrast	9	If additional imaging is necessary, and if internal derangement is suspected.	None
X-ray hip ipsilateral	1		Med
CT knee without contrast	1		Min
CT arthrography knee	1		Min
MR arthrography knee	1		None
US knee	1		None
NUC Tc-99m bone scan lower extremity	1		Med
<b><u>Rating Scale:</u> 1=Least appropriate, 9=Most appropriate</b>			<b>*Relative</b>

<b>Radiologic Procedure</b>	<b>Rating</b>	<b>Comments</b>	<b>RRL*</b>
			<b>Radiation Level</b>

Note: Abbreviations used in the tables are listed at the end of the "Major Recommendations" field.

**Variant 6: Adult: nontrauma, nontumor, nonlocalized pain. Initial knee radiographs nondiagnostic (demonstrate normal findings or a joint effusion).**

<b>Radiologic Procedure</b>	<b>Rating</b>	<b>Comments</b>	<b>RRL*</b>
MRI knee without contrast	9	If additional imaging is necessary and if internal derangement is suspected.	None
X-ray hip ipsilateral	1		Med
CT knee without contrast	1		Min
CT arthrography knee	1		Min
MR arthrography knee	1		None
US knee	1		None
NUC Tc-99m bone scan lower extremity	1		Med
<b><u>Rating Scale:</u> 1=Least appropriate, 9=Most appropriate</b>			<b>*Relative Radiation Level</b>

Note: Abbreviations used in the tables are listed at the end of the "Major Recommendations" field.

**Variant 7: Child or adolescent: nonpatellofemoral symptoms. Initial knee radiographs demonstrate osteochondral injuries (fracture/osteochondritis dissecans or a loose body).**

<b>Radiologic Procedure</b>	<b>Rating</b>	<b>Comments</b>	<b>RRL*</b>
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<b>Radiologic Procedure</b>	<b>Rating</b>	<b>Comments</b>	<b>RRL*</b>
MRI knee without contrast	9		None
MR arthrography knee	6		None
CT arthrography knee	5	If MRI cannot be done.	Low
X-ray hip ipsilateral	1		Med
CT knee without contrast	1		Low
US knee	1		None
NUC Tc-99m bone scan lower extremity	1		Med
<b><u>Rating Scale:</u> 1=Least appropriate, 9=Most appropriate</b>			<b>*Relative Radiation Level</b>

Note: Abbreviations used in the tables are listed at the end of the "Major Recommendations" field.

**Variant 8: Adult: patellofemoral (anterior) symptoms. Initial knee radiographs demonstrate degenerative joint disease and/or chondrocalcinosis.**

<b>Radiologic Procedure</b>	<b>Rating</b>	<b>Comments</b>	<b>RRL*</b>
X-ray hip ipsilateral	1		Med
CT knee without contrast	1		Min
CT arthrography knee	1		Min
MRI knee without contrast	1		None
MRI arthrography knee	1		None
US knee	1		None

<b>Radiologic Procedure</b>	<b>Rating</b>	<b>Comments</b>	<b>RRL*</b>
NUC Tc-99m bone scan lower extremity	1		Med
<b><u>Rating Scale:</u> 1=Least appropriate, 9=Most appropriate</b>			<b>*Relative Radiation Level</b>

Note: Abbreviations used in the tables are listed at the end of the "Major Recommendations" field.

**Variant 9: Adult: nontumor, nonlocalized pain. Initial knee radiographs demonstrate inflammatory, crystalline, or degenerative joint disease (uni- to tri- compartmental sclerosis, hypertrophic spurs, joint space narrowing, and/or subchondral cysts).**

<b>Radiologic Procedure</b>	<b>Rating</b>	<b>Comments</b>	<b>RRL*</b>
X-ray hip ipsilateral	1		Med
CT knee without contrast	1		Min
CT arthrography knee	1		Min
MRI knee without contrast	1	Consider for preoperative assessment.	None
MRI arthrography knee	1		None
US knee	1		None
NUC Tc-99m bone scan lower extremity	1		Med
<b><u>Rating Scale:</u> 1=Least appropriate, 9=Most appropriate</b>			<b>*Relative Radiation Level</b>

Note: Abbreviations used in the tables are listed at the end of the "Major Recommendations" field.

**Variant 10: Adult: nontumor, nonlocalized pain. Initial knee radiographs demonstrate avascular necrosis.**

<b>Radiologic Procedure</b>	<b>Rating</b>	<b>Comments</b>	<b>RRL*</b>
MRI knee without contrast	7	If needed for therapy	None
CT knee without contrast	1		Min
CT arthrography knee	1		Min
MR arthrography knee	1		None
US knee	1		None
NUC Tc-99m bone scan lower extremity	1		Med
<b><u>Rating Scale:</u> 1=Least appropriate, 9=Most appropriate</b>			<b>*Relative Radiation Level</b>

Note: Abbreviations used in the tables are listed at the end of the "Major Recommendations" field.

**Variant 11: Adult: nontumor, nonlocalized pain. Initial knee radiographs demonstrate evidence of internal derangement (e.g., Segond fracture, deep lateral femoral notch sign).**

<b>Radiologic Procedure</b>	<b>Rating</b>	<b>Comments</b>	<b>RRL*</b>
MRI knee without contrast	9		None
CT arthrography knee	2	If MRI contraindicated.	Min
CT knee without contrast	1		Min
MR arthrography knee	1		None
US knee	1		None
NUC Tc-99m bone scan lower extremity	1		Med

<b>Radiologic Procedure</b>	<b>Rating</b>	<b>Comments</b>	<b>RRL*</b>
<b><u>Rating Scale:</u> 1=Least appropriate, 9=Most appropriate</b>			<b>*Relative Radiation Level</b>

Note: Abbreviations used in the tables are listed at the end of the "Major Recommendations" field.

### **Summary of Literature Review**

Nontraumatic knee pain in children, adolescents, and adults includes localized complaints such as anterior (patellofemoral) pain and diffuse nonlocalized symptoms. The consensus of the committee is that the initial imaging studies for nontraumatic knee pain are anteroposterior (AP) and lateral radiograph. For patients with diffuse non-localized symptoms, a Merchant or axial view may be useful as part of the initial examination. In children with nontraumatic knee pain, referred pain from the hip must be considered and hip radiographs may need to be obtained if there is clinical evidence or clinical concern for hip pathology.

In elderly patients, the most common source of nontraumatic knee pain is osteoarthritis. Conventional radiographic diagnosis of degenerative joint disease (osteoarthritis) includes joint space narrowing, osteophytes, subchondral cysts, and sclerosis bordering the joint. Articular cartilage is evaluated indirectly on radiographs by joint space narrowing and changes in the subchondral bone. Routine radiographs are insensitive for assessing articular cartilage in the early stages of osteoarthritis, while in advanced disease, joint space narrowing on radiographs is usually an accurate assessment of cartilage loss. Standing radiographs have been reported to more accurately reflect medial and lateral joint compartment cartilage loss than supine radiographs; however, in the presence of a severe varus or valgus deformity, significant cartilage loss in the compartment that appears wide (due to the alignment deformity) may not be evident. A weight-bearing posteroanterior (PA) radiograph, obtained with knee flexion, has been reported to show the cartilage width of the posterior medial and lateral joint compartments more accurately than that a standing view obtained with the knee extended. The standing flexed view may be indicated in elderly patients with osteoarthritis when surgical intervention is being planned. Finally, one should bear in mind that a significant portion of the joint space narrowing may be due to meniscal extrusion or degeneration rather than hyaline cartilage loss in some patients. Additional imaging studies are not indicated in patients for whom radiographs are diagnostic of degenerative joint disease unless treatment, or surgery, or both are dependent on additional findings such as internal knee derangement or when symptoms are not explained by the radiographic findings (e.g., stress fractures).

Other nontraumatic causes of knee pain in adult patients include internal knee derangement (meniscal and ligament tears), stress fracture, subchondral insufficiency fracture (known as spontaneous osteonecrosis), inflammatory arthritis, transient osteoporosis, and chronic regional pain syndrome. Chronic anterior lateral knee pain may also result from patella tendon--lateral femoral

condyle friction syndrome or iliotibial band syndrome (friction syndrome) both of which can be confirmed or excluded by magnetic resonance imaging (MRI).

When initial radiographs are nondiagnostic (normal findings or a joint effusion) and knee symptoms are suspicious for an internal derangement, the next indicated study is an MRI examination. MRI is also indicated when the patient has persistent knee pain and normal radiographs. MRI is more sensitive than radiography and provides more specific information compared with radionuclide bone scan. MRI of nontraumatic knee pain may document a joint effusion, communicating synovial cysts, proliferative changes of the synovial membrane, osteophytes, subchondral cysts, articular cartilage loss, meniscal and/or ligamentous tears and/or degeneration, bone marrow edema, fractures, and osteonecrosis. A secondary MRI finding with a high sensitivity for internal derangement is an AP joint fluid measurement of greater than 10 mm in the lateral suprapatellar pouch.

MRI is useful to identify a subchondral insufficiency fracture as the initial injury from which localized osteonecrosis may result and which was otherwise identified as spontaneous osteonecrosis. MRI can also detect osteonecrosis of the medial femoral condyle or of the medial tibial plateau associated with tibial stress fracture.

A suprapatellar joint effusion is readily detected on a lateral radiograph of the knee; however, the extent of a joint effusion, the presence of a communicating synovial (popliteal) cyst, or synovial proliferation is readily identified on MRI. Subchondral cysts are easily detected on MRI because of the tomographic quality, multiplanar imaging capability, and the superb sensitivity to fluid- and fat-containing tissues. Cartilage pathology, both articular and meniscal, can be evaluated directly on MRI, and demonstration depends on the location of the abnormality and the pulse sequences used.

Magnetic resonance arthrography (MRA) performed with an intra-articular injection of dilute gadolinium solution or with an intravenous injection of gadolinium contrast to improve cartilage evaluation has been investigated, but noncontrast MRI has been reported accurate for cartilage abnormalities. Patellofemoral cartilage loss has been reported to be closely associated with chronic knee pain symptoms.

Transient osteoporosis is characterized by self-limited pain and radiographically demonstrable osteopenia. The osteopenia typically develops within eight weeks after the onset of pain. Spontaneous osteonecrosis of the medial femoral condyle, most often found in middle-aged and elderly females, may have normal radiographs for months, followed by subchondral collapse, fragmentation of the articular cartilage, and progressive osteoarthritis. Bone marrow edema seen on MRI occurs in association with, or independent of, transient osteoporosis or osteonecrosis, and also in association with stress fractures; MRI is highly sensitive for detecting these abnormalities. In adult patients with conventional radiograph diagnosis of an osteochondral injury such as osteochondritis dissecans or osteonecrosis, an MRI examination may be indicated if an additional injury is suspected clinically or when it is necessary to determine the status of the articular cartilage over the area of abnormality. In the child or adolescent with radiographic evidence of osteochondritis dissecans, an MRI is indicated to determine the best

method of treatment. Finally, MRI is not indicated to confirm a stress fracture that is evident on the radiographic study.

In patients with conventional evidence of inflammatory arthritis of the knee, the consensus of the panel is that a knee MRI is usually not indicated for preoperative differentiation of pannus from effusion or for evaluation of erosion. An aspiration for crystals may be indicated; however, the use of medical imaging (such as fluoroscopic guidance, ultrasound guidance, or arthrographic confirmation) is usually not necessary.

When intra-articular abnormality is suspected in a patient with claustrophobia, with a large body habitus, or who cannot, for some reason, tolerate an MRI examination, or when there is contraindication to an MRI, a computed tomography (CT) arthrogram may be used instead of the MRI to evaluate the cruciate ligaments, menisci, and articular cartilage.

## Summary

The mandatory initial imaging examination for nontraumatic knee pain is AP and lateral radiography. In patients with anterior patellofemoral knee pain, an axial view should be included in the initial radiographic study. An MRI examination for nontraumatic knee pain is indicated when the pain is persistent and conventional radiographs are nondiagnostic or when additional information is necessary before instituting treatment or surgical intervention. An MRI is not indicated before a physical examination or routine conventional radiographs, or when there is diagnostic radiographic evidence of severe degenerative joint diseases, inflammatory arthritis, stress fracture, osteonecrosis, or reflex sympathetic dystrophy, for which additional imaging is not going to alter the treatment plan.

## Abbreviations

- CT, computed tomography
- Med, medium
- Min, minimal
- MRI, magnetic resonance imaging
- NUC, nuclear medicine
- Tc, technetium
- US, ultrasound

Relative Radiation Level	Effective Dose Estimated Range
None	0
Minimal	<0.1 mSv
Low	0.1-1 mSv
Medium	1-10 mSv
High	10-100 mSv

## CLINICAL ALGORITHM(S)

None provided

## EVIDENCE SUPPORTING THE RECOMMENDATIONS

### TYPE OF EVIDENCE SUPPORTING THE RECOMMENDATIONS

The recommendations are based on analysis of the current literature and expert panel consensus.

## BENEFITS/HARMS OF IMPLEMENTING THE GUIDELINE RECOMMENDATIONS

### POTENTIAL BENEFITS

Selection of appropriate radiologic imaging procedures to evaluate patients with nontraumatic knee pain

### POTENTIAL HARMS

#### Relative Radiation Level (RRL)

Potential adverse health effects associated with radiation exposure are an important factor to consider when selecting the appropriate imaging procedure. Because there is a wide range of radiation exposures associated with different diagnostic procedures, a relative radiation level indication has been included for each imaging examination. The RRLs are based on effective dose, which is a radiation dose quantity that is used to estimate population total radiation risk associated with an imaging procedure. Additional information regarding radiation dose assessment for imaging examinations can be found in the American College of Radiology (ACR) Appropriateness Criteria® Radiation Dose Assessment Introduction document (see "Availability of Companion Documents" field).

## QUALIFYING STATEMENTS

### QUALIFYING STATEMENTS

An American College of Radiology (ACR) Committee on Appropriateness Criteria and its expert panels have developed criteria for determining appropriate imaging examinations for diagnosis and treatment of specified medical condition(s). These criteria are intended to guide radiologists, radiation oncologists, and referring physicians in making decisions regarding radiologic imaging and treatment. Generally, the complexity and severity of a patient's clinical condition should dictate the selection of appropriate imaging procedures or treatments. Only those exams generally used for evaluation of the patient's condition are ranked. Other imaging studies necessary to evaluate other co-existent diseases or other medical consequences of this condition are not considered in this document. The availability of equipment or personnel may influence the selection of appropriate imaging procedures or treatments. Imaging techniques classified as investigational by the U.S. Food and Drug Administration (FDA) have not been

considered in developing these criteria; however, study of new equipment and applications should be encouraged. The ultimate decision regarding the appropriateness of any specific radiologic examination or treatment must be made by the referring physician and radiologist in light of all the circumstances presented in an individual examination.

## IMPLEMENTATION OF THE GUIDELINE

### DESCRIPTION OF IMPLEMENTATION STRATEGY

An implementation strategy was not provided.

### IMPLEMENTATION TOOLS

Personal Digital Assistant (PDA) Downloads

For information about [availability](#), see the "Availability of Companion Documents" and "Patient Resources" fields below.

## INSTITUTE OF MEDICINE (IOM) NATIONAL HEALTHCARE QUALITY REPORT CATEGORIES

### IOM CARE NEED

Getting Better  
Living with Illness

### IOM DOMAIN

Effectiveness

## IDENTIFYING INFORMATION AND AVAILABILITY

### BIBLIOGRAPHIC SOURCE(S)

Bennett DL, Daffner RH, Weissman BN, Blebea JS, Jacobson JA, Morrison WB, Resnik CS, Roberts CC, Rubin DA, Schweitzer ME, Seeger LL, Taljanovic M, Wise JN, Payne WK, Expert Panel on Musculoskeletal Imaging. ACR Appropriateness Criteria® nontraumatic knee pain. [online publication]. Reston (VA): American College of Radiology (ACR); 2008. 7 p. [44 references]

### ADAPTATION

Not applicable: The guideline was not adapted from another source.

### DATE RELEASED

1995 (revised 2008)



## **GUIDELINE DEVELOPER(S)**

American College of Radiology - Medical Specialty Society

## **SOURCE(S) OF FUNDING**

The American College of Radiology (ACR) provided the funding and the resources for these ACR Appropriateness Criteria®.

## **GUIDELINE COMMITTEE**

Committee on Appropriateness Criteria; Expert Panel on Musculoskeletal Imaging

## **COMPOSITION OF GROUP THAT AUTHORED THE GUIDELINE**

*Panel Members:* D. Lee Bennett, MD; Richard H. Daffner, MD; Barbara N. Weissman, MD; Judy S. Blebea, MD; Jon A. Jacobson, MD; William B. Morrison, MD; Charles S. Resnik, MD; Catherine C. Roberts, MD; David A. Rubin, MD; Mark E. Schweitzer, MD; Leanne L. Seeger, MD; Mihra Taljanovic, MD; James N. Wise, MD; William K. Payne, MD

## **FINANCIAL DISCLOSURES/CONFLICTS OF INTEREST**

Not stated

## **GUIDELINE STATUS**

This is the current release of the guideline.

This guideline updates a previous version: Pavlov H, Dalinka MK, Alazraki NP, Daffner RH, DeSmet AA, El-Khoury GY, KNeeland JB, Manaster BJ, Rubin DA, Steinbach LS, Weissman BN, Haralson RH III, Expert Panel on Musculoskeletal Imaging. Nontraumatic knee pain. [online publication]. Reston (VA): American College of Radiology (ACR); 2005. 9 p. [44 references]

The appropriateness criteria are reviewed annually and updated by the panels as needed, depending on introduction of new and highly significant scientific evidence.

## **GUIDELINE AVAILABILITY**

Electronic copies: Available in Portable Document Format (PDF) from the [American College of Radiology \(ACR\) Web site](#).

ACR Appropriateness Criteria® *Anytime, Anywhere*™ (PDA application). Available from the [ACR Web site](#).

Print copies: Available from the American College of Radiology, 1891 Preston White Drive, Reston, VA 20191. Telephone: (703) 648-8900.

## AVAILABILITY OF COMPANION DOCUMENTS

The following are available:

- ACR Appropriateness Criteria®. Background and development. Reston (VA): American College of Radiology; 2 p. Electronic copies: Available in Portable Document Format (PDF) from the [American College of Radiology \(ACR\) Web site](#).
- ACR Appropriateness Criteria® radiation dose assessment introduction. American College of Radiology. 2 p. Electronic copies: Available from the [American College of Radiology Web site](#).

## PATIENT RESOURCES

None available

## NGC STATUS

This summary was completed by ECRI on May 6, 2001. The information was verified by the guideline developer as of June 29, 2001. This NGC summary was updated by ECRI on January 30, 2006. This summary was updated by ECRI Institute on June 29, 2009.

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